

# SEUNGPYO HONG, PH.D.

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## EDUCATION

- 2006 - 2008     **POSTDOCTORAL** CHEMICAL ENGINEERING (Advisor: Prof. [Robert Langer](#))  
**MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)**, CAMBRIDGE, MA
- 2002 - 2006     **PH.D.** MACROMOLECULAR SCIENCE AND ENGINEERING (Advisors: Profs. [Mark M. Banaszak Holl](#)  
and [James R. Baker, Jr.](#))  
DISSERTATION: "INTERACTIONS OF SYNTHETIC POLYMERS WITH CELL MEMBRANES: CELL  
PENETRATION OF POLYCATIONIC POLYMERS AND MULTIVALENT EFFECTS OF TARGETED  
NANODEVICES"  
**UNIVERSITY OF MICHIGAN**, ANN ARBOR, MI
- 1999 - 2001     **M.S.** POLYMER ENGINEERING (Advisors: Prof. [Byung Chul Kim](#) and Dr. [Soon Man Hong](#))  
DISSERTATION: "SYNTHESIS AND PHYSICAL PROPERTIES OF NOVEL  
POLY(METHYLPHENYLSILSESQUIOXANE)S WITH HIGHLY REGULATE STRUCTURE"  
**HANYANG UNIVERSITY/KOREA INSTITUTE OF SCIENCE AND TECHNOLOGY**, SEOUL, KOREA
- 1993 - 1999\*   **B.S.** FIBER AND POLYMER ENGINEERING  
**HANYANG UNIVERSITY**, SEOUL, KOREA \*1994-1996, KOREAN MILITARY SERVICE (MANDATORY)

## PROFESSIONAL EXPERIENCE

- 2014 - Present   **ASSOCIATE PROFESSOR (WITH TENURE)**  
Department of Biopharmaceutical Sciences, College of Pharmacy  
University of Illinois, Chicago, IL
- 2014 - Present   **ADJUNCT ASSOCIATE PROFESSOR**  
Department of Bioengineering, College of Engineering  
University of Illinois at Chicago, Chicago, IL
- 2008 - 2014     **ASSISTANT PROFESSOR**  
Department of Biopharmaceutical Sciences, College of Pharmacy  
University of Illinois, Chicago, IL
- 2008 - 2014     **ADJUNCT ASSISTANT PROFESSOR**  
Department of Bioengineering, College of Engineering  
University of Illinois at Chicago, Chicago, IL
- 2008 - Present   **MEMBER**  
University of Illinois Cancer Center, Chicago, IL
- 2013 - Present   **CO-FOUNDER & PRESIDENT**  
Capio Biosciences, Inc., Naperville, IL
- 2012 - 2013     **ASSOCIATE EDITOR**  
Journal of Nanopharmaceutics and Drug Delivery  
American Scientific Publishers
- 2001 - 2002     **RESEARCH SCIENTIST**  
Polymer Hybrids Research Center  
Korea Institute of Science and Technology, Seoul, KOREA

## PRIZES AND HONORS

- 2013 **INVITED PARTICIPANT, NAE EU-US FRONTIERS OF ENGINEERING SYMPOSIUM**  
National Academy of Engineering (NAE), Chantilly, FRANCE
- 2013 **RESEARCHER OF THE YEAR – RISING STAR AWARD**  
University of Illinois, Chicago, IL
- 2012 **AAPS NEW INVESTIGATOR AWARD IN PHARMACEUTICS AND PHARMACEUTICAL TECHNOLOGIES**  
American Association of Pharmaceutical Scientists (AAPS)
- 2011 **NSF FELLOWSHIP**  
The Cancer Nanotechnology Summer Institute, NSF, Houston, TX
- 2009 **VAHLTEICH RESEARCH AWARD**  
University of Illinois College of Pharmacy, Chicago, IL
- 2007 **A 2006 MOST-CITED ACS JOURNAL ARTICLE**  
S. Hong *et al.*, *Bioconjugate Chem.* **2006**, 17, 728-734.
- 2005 **BEST POSTER AWARD**  
2005 Materials Research Society (MRS) National Fall Meeting in Boston, MA
- 2004 **CHARLES G. OVERBERGER AWARD**  
Macromolecular Science and Engineering, University of Michigan, Ann Arbor, MI
- 2002 **DWIGHT F. BENTON FELLOWSHIP**  
Dean's Named Fellowship, College of Engineering, University of Michigan, Ann Arbor, MI
- 1999 **SUMMA CUM LAUDE**  
Fiber and Polymer Engineering, Hanyang University, Seoul, Korea
- 1996 - 1999 **MERIT-BASED SCHOLARSHIP (TUITION WAIVERS)**  
Fiber and Polymer Engineering, Hanyang University, Seoul, Korea

## PROFESSIONAL AND EXTRACURRICULAR ACTIVITIES

- 2014 **AD HOC REVIEWER**, ETTN-B (50) study section, NIH
- 2013 **SYMPOSIUM CHAIR**, Symposium Z: Bio-inspired Engineering for Multifunctional Biosurfaces, The 7<sup>th</sup> International Conference on Materials for Advance Technologies (ICMAT 2013), Suntec, SINGAPORE
- 2013 - Present **EDITORIAL BOARD**, Journal of Nanopharmaceutics and Drug Delivery (JND)
- 2013 **AD HOC REVIEWER**, National Institute of Child Health and Human Development, NIH
- 2012 - Present **REVIEWER**, Oak Ridge Associated Universities, Nazarbayev University Research Council, Astana, KAZAKHSTAN
- 2012 **SESSION CHAIR**, Gene and Drug Delivery Session, The 34<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBS), San Diego, CA
- 2012 **SESSION CHAIR AND CO-CHAIR**, Drug Delivery I and II sessions, American Institute for Chemical Engineers (AIChE) Annual Meeting, Pittsburgh, PA
- 2011 - 2013 **REVIEWER**, Agency for Science, Technology & Research (A\*STAR), The Science & Engineering Research Council (SERC), Singapore
- 2011 **SCIENTIST PANEL REVIEWER**, Breast Cancer Research Program (BCRP) Review Panel, Department of Defense (DOD)
- 2011 **REVIEWER**, New Investigator Award, American Association of Colleges of Pharmacy (AACCP)
- 2011 - Present **REVIEWER**, R&D Excellence Award, Kentucky Science and Engineering Foundation (KSEF)
- 2010 **NSF CAREER PANEL**, Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET), National Science Foundation (NSF)
- 2010 - 2011 **AD HOC REVIEWER**, National Institute of Child Health and Human Development, NIH
- 2010 **MAIL REVIEWER**, Investment in Scientific Infrastructure 2010, The Netherlands Organization for Health Research and Development, The Netherlands
- 2010 **SESSION CO-CHAIR**, Drug Delivery I and III sessions, American Institute for Chemical Engineers (AIChE) Annual Meeting, Salt Lake City, UT
- 2010 - Present **REVIEWER**, NSFC/RSG-Hong Kong Joint Research Program
- 2010 - 2012 **NSF PANEL REVIEWER**, Biomedical Engineering Program (BME), Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET), National Science Foundation (NSF)
- 2010 - Present **FACULTY ADVISOR**, AAPS Illinois Student Chapter

2010 **NSF PANEL REVIEWER**, NanoManufacturing Program, Division of Civil, Mechanical and Manufacturing Innovation (CMMI), National Science Foundation (NSF)

2010 - Present **MEMBER**, American Institute of Chemical Engineers (AIChE)

2010 **ACTING SESSION CHAIR**, Track 3-2-1 Lab-on-chip and Microfluidics for Diagnostics, ASME2010 First Global Congress on NanoEngineering for Medicine and Biology, Houston, TX

2009 **MAIL (STAGE 1) REVIEWER**, ZRG1 OTC-K (58) in the Oncology-2 Translational Clinical IRG (OTC), National Institutes of Health (NIH)

2009 - Present **FACULTY FELLOW**, The Honors College, University of Illinois at Chicago

2009 - Present **MEMBER**, American Association for Pharmaceutical Sciences (AAPS)

2008 - Present **IMSA ADVISOR**, University faculty advisor for high school students at Illinois Mathematics and Science Academy (IMSA)

2008 - Present **MEMBER**, American Association for Cancer Research (AACR)

2008 - Present **MEMBER**, American Association of Colleges of Pharmacy (AACP)

2007 - 2008 **MEMBER**, Biomedical Engineering Society (BMES)

2004 - Present **MEMBER**, American Chemical Society (ACS)

2002 - 2008 **MEMBER**, Materials Research Society (MRS)

2003 - 2004 **VICE PRESIDENT**, Korean Student Association-Graduate (KSAG), University of Michigan

2001 - 2002 **MEMBER**, The Polymer Society of Korea

## CURRENT AND COMPLETED RESEARCH SUPPORT

Jun. 2010 - May 2014 **Role: co-PI** (PI: Dr. Seema Khan of Northwestern)  
 Susan G. Komen Foundation  
 Susan G. Komen for the Cure Research Funds - Investigator Initiated Research  
 Grant No: KG100713  
 "Topical Transdermal Therapy for Breast Cancer Prevention using Dendrimer Nanoparticles for Drug Delivery"  
 The goal of this study is to achieve effective transdermal delivery of chemo-preventive medicine using novel nanomaterial-based formulations that enhances skin penetration of the drugs.

Jan. 2014 - Dec. 2018 **Role: co-I** (PI: Dr. Jianjun Chen of U of Chicago)  
 National Cancer Institute (NCI), National Institutes of Health (NIH)  
 Grant No: 1R01CA182528-01  
 "Potential Therapeutic Implications of Targeting miR-150 in Acute Myeloid Leukemia"  
 The goal of this study is to develop a novel dendrimer-based delivery system for selective targeting to miR to treat highly lethal acute myeloid leukemia.

Jul. 2013 - Jun. 2015 **Role: co-PI** (PI: Dr. Jianjun Chen of U of Chicago)  
 Alex's Lemonade Stand Foundation for Childhood Cancer  
 "Development of microRNA-Nanoparticles to Treat Childhood Acute Leukemia Carrying MLL Rearrangements"  
 The goal of this study is to develop a novel nanocarrier to specifically deliver microRNA targeting leukemia cells in the blood circulation, specifically designed to treat childhood leukemia.

Oct. 2013 - Sept. 2016 **Role: co-PI** (PI: Dr. Jianjun Chen of U of Chicago)  
 Leukemia & Lymphoma Society  
 "Therapeutic Potential of miR-22 in Treating MLL-rearranged Leukemias"  
 The goal of this study is to explore the therapeutic potential of miR-150 and develop a micro RNA delivery system using dendrimer nanoparticles as a potential treatment tool for MLL-rearranged leukemias.

- Aug. 2013 - Jul. 2015 **Role: co-PI** (PI: Chanwoo Lee of Durae, Inc.)  
 Small & Medium Business Administration of the Korean Government  
 Grant No: S2083505  
 “Transdermal Delivery of Natural Compounds”  
 The goal of this study is to develop a nanoparticle system for effective skin delivery of natural compounds.
- Nov. 2012 - Oct. 2015 **Role: PI**  
 American Association of Pharmaceutical Scientists (AAPS)  
 AAPS New Investigator Grant Award in Pharmaceutics and Pharmaceutical Technologies  
 “Biomimetic Nanotechnology for Cancer Intervention”  
 This is an award given to one promising junior faculty member annually based on his/her research/education achievements in pharmaceutical sciences.
- Jan. 2013 – Jun. 2014 **Role: PI**  
 University of Illinois at Chicago  
 Proof of Concept funding from U of I Office of Technology Management (OTM)  
 “Development of a Biomimetic Device Prototype for Detection of Circulating Tumor Cells”  
 The goal of study is to lay down a cornerstone for the translation of our CTC capture technology for potential commercialization. We will follow up on this with a either newly formed company or licensing this technology to existing companies.
- Jul. 2012 - Jun. 2014 **Role: co-PI** (co-PI: Dr. Joanna Burdette)  
 University of Illinois at Chicago  
 Chancellor’s Discovery Funds  
 “Prevention and Therapy of Ovarian Cancer using Nanocarriers”  
 The overarching goal of this project is to develop a targeted nanocarrier system that will deliver a therapeutic drug to selectively kill cells expressing the follicle stimulating hormone receptor (FSHR). We anticipate to developing a FSH-targeted nanocarrier that can potentially offer an option for ovarian cancer prevention.
- Jan. 2013 - Dec. 2014 **Role: co-PI** (co-PIs: Drs. Yingxiao Wang and Howard Ozer)  
 University of Illinois Cancer Center  
 Transitional Cancer Research Pilot Program  
 “An Integrated Platform for Detection and Analysis of Invasive Breast Circulating Tumor Cells”  
 The objective of this study is to integrate MMP sensor in our CTC detection platform to profile the MMP expression of the tumor cells captured on surfaces with various antibodies.
- Sept. 2009 - Aug. 2013 **Role: PI**  
 (Completed)  
 National Science Foundation (NSF)  
 Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET)  
 Grant No: CBET-0931472  
 “Biomimetic Multifunctional Device for Quantification and Analysis of Circulating Tumor Cells (CTCs)”  
 The goal of this study is to develop a microfluidic device that can detect and isolate CTCs at enhanced sensitivity and specificity by exploiting two naturally occurring processes: cell rolling and multivalent binding.

- Mar. 2010 - Feb. 2012  
(Completed) **Role: PI**  
Amore-Pacific Co., Ltd.  
“Enhanced Transdermal Delivery Systems for Cosmetic Compounds”  
The goal of this study is to develop topical, transdermal nanoformulations that facilitate translocation of cosmetic compounds across the skin layers.
- Jan. 2010 - Dec. 2010  
(Completed) **Role: PI**  
Vahlteich Research Fund (Vahlteich Research Scholar Award), University of Illinois  
College of Pharmacy  
“A Biomimetic Multivalent Dendron-based Novel Nanocarrier for Cancer Targeting”  
The goal of this study is to design, synthesize, and biologically validate a novel drug delivery system based upon multivalent dendron.
- Jul. 2009 - Jun. 2010  
(Completed) **Role: Co-I** (PI: Dr. Alexander Lyubimov)  
National Cancer Institute (NCI), National Institutes of Health (NIH)  
Contract No: NO1-CN-43306, Work Assignment 22  
“Fourteen Day Oral Range Finding Studies. Toxicity studies in Rats”  
The goal of this study is to develop nanoformulation methods to increase oral bioavailability of water insoluble anti-cancer drugs.

## RESEARCH SUPPORT PENDING APPROVAL

- Jul. 2014 - Jun. 2016  
(scored at 10<sup>th</sup>  
percentile) **Role: PI**  
NCI, NIH  
Grant No: 1R21CA182580-01A1  
“An Integrated Platform for Detection and Analysis of Invasive Breast Circulating Tumor Cells”  
The objective of this study is to integrate MMP sensor in our CTC detection platform to profile the MMP expression of the tumor cells captured on surfaces with various antibodies.

## STUDENTS SUPERVISED

### POSTDOCTORAL

- Jan. 2012 - Present **DR. JA HYE MYUNG**, Postdoctoral associate, UIC, Chicago, IL  
 Jun. 2009 - Jun. 2011 **DR. JIN WOO BAE**, Postdoctoral associate, UIC, Chicago, IL  
 Aug. 2009 - Aug. 2010 **DR. SU-EON JIN**, Postdoctoral associate, UIC, Chicago, IL  
 Jan. 2009 - Apr. 2009 **DR. DAVID Y.S. CHAU**, Postdoctoral associate, UIC, Chicago, IL

### Ph.D. STUDENTS

- Jan. 2014 - Present **VANESSA V. JEUTTNER**, Graduate student (Rotation), Biopharmaceutical Sciences, UIC, Chicago, IL  
 Sept. 2013 - Dec. 2013 **YIAN GUO**, Graduate student (Rotation), Biopharmaceutical Sciences, UIC, Chicago, IL  
 Aug. 2012 - Dec. 2012 **YE EON HAN**, Graduate student (Rotation), Biopharmaceutical Sciences, UIC, Chicago, IL  
 Aug. 2011 - Present **HAO-JUI HSU**, Graduate student, Biopharmaceutical Sciences, UIC, Chicago, IL  
 Jan. 2011 - Apr. 2011 **JINGLI JI**, Graduate student (Rotation), Biopharmaceutical Sciences, UIC, Chicago, IL  
 Aug. 2010 - Dec. 2010 **DAVID VAYNSHTEYN**, Rotation student (Rotation), Biopharmaceutical Sciences, UIC, Chicago, IL  
 Aug. 2010 - Dec. 2010 **ADITI JHAVERI**, Rotation student (Rotation), Biopharmaceutical Sciences, UIC, Chicago, IL  
 Aug. 2009 - Present **RYAN PEARSON**, Graduate student, Biopharmaceutical Sciences, UIC, Chicago, IL  
 Jan. 2009 - Sept. 2013 **YANG YANG**, Graduate student, Biopharmaceutical Sciences, UIC, Chicago, IL (currently Postdoc at FDA)  
 Aug. 2008 - Aug. 2013 **SUHAIR SUNOQROT**, Graduate student, Biopharmaceutical Sciences, UIC, Chicago, IL (currently Assistant Professor at Al-Zaytoonah University of Jordan)

Aug. 2008 - Dec. 2012 **JA HYE MYUNG**, Graduate student, Biopharmaceutical Sciences, UIC, Chicago, IL (currently a postdoc in the lab)  
Sept. 2007 - Apr. 2008 **VANESSA LUNDIN**, Visiting graduate student, The Langer lab, MIT, Cambridge, MA (currently a graduate students at Chalmers University of Technology in Sweden)

#### **Pharm.D/Ph.D. STUDENTS**

Aug. 2012 - Present **JASON BUGNO**, Pharmacy/Biopharmaceutical Sciences, UIC, Chicago, IL

#### **Pharm.D STUDENTS**

Sept. 2012 - Dec. 2012 **RO TSAI "SUSAN" SANG**, Pharmacy, UIC, Chicago, IL

#### **M.S. STUDENT**

Mar. 2012 - Aug. 2013 **ERI IAWASAKI**, Graduate student, Bioengineering, UIC, Chicago, IL (currently at Takeda, JAPAN)

Jan. 2010 - Jul. 2011 **KEVIN SHYU**, Graduate student, Bioengineering, UIC, Chicago, IL (currently at Baxter)

#### **UNDERGRADUATES**

Jun 2013 - Present **KEVIN TAM**, Undergraduate student, Biological Sciences (honors, GPPA), UIC, Chicago, IL

Jun 2013 - Present **MATTHEW PASCO**, Undergraduate student, Bioengineering (honors), UIC, Chicago, IL

Jun 2013 - Present **ASHLEY CHA**, Undergraduate student, Chemistry (honors, GPPA), UIC, Chicago, IL

Jun 2013 - Present **MARILYN GASKE**, Undergraduate student, Chemistry (honors, GPPA), UIC, Chicago, IL

Sept 2012 - May 2013 **MARTIN STRAMA**, Undergraduate student, Bioengineering (honors), UIC, Chicago, IL

May 2011 - Aug. 2011 **CHELSEA STOWELL**, Undergraduate student at Vanderbilt Univ. (REU student), UIC, Chicago, IL

May 2011 - Aug. 2011 **JACQUELINE HANDLEY**, Undergraduate student at Univ. Illinois at Urbana Champaign (REU student), UIC, Chicago, IL

Feb. 2010 - May 2012 **JELENA SARIC**, Undergraduate student, Honors College, UIC, Chicago, IL

Jan. 2009 – Sept. 2012 **KHYATI GAJJAR**, Undergraduate student, Chemistry (Honors College), UIC, Chicago, IL

Jun. 2009 - May 2013 **SAYAM UDDIN**, Undergraduate student, Mathematics (Honors College), UIC, Chicago, IL

May 2010 - Aug 2010 **LIZA XU**, Undergraduate student at MIT (REU student), UIC, Chicago, IL

Jun. 2009 - Dec. 2009 **MAIRA DAWOOD**, Undergraduate student, Neuroscience (Honors College), UIC, Chicago, IL

Oct. 2008 - Dec. 2008 **TAREK CATTAN**, Undergraduate student, UIC, Chicago, IL

Aug. 2006 - Jun. 2008 **HUANAN ZHANG**, Undergraduate student, The Langer lab, MIT, Cambridge, MA

Aug. 2006 - Jun. 2008 **JENNIFER ZHANG**, Undergraduate student, The Langer lab, MIT, Cambridge, MA

Jun. 2007 - Jun. 2008 **MINHEE SUNG**, Undergraduate student, The Langer lab, MIT, Cambridge, MA

Aug. 2006 - May 2007 **JENNIFER RESVICK**, Undergraduate student, The Langer lab, MIT, Cambridge, MA

Aug. 2006 - Dec. 2006 **JAYODITA SANGHVI**, Undergraduate student, The Langer lab, MIT, Cambridge, MA

Sept. 2004 - Jun. 2006 **MAGGIE KOBER**, Undergraduate student, MNIIMBS, University of Michigan, Ann Arbor, MI

Sept. 2004 - Jun. 2005 **SEAN GANT**, Undergraduate student, MNIIMBS, University of Michigan, Ann Arbor, MI

May 2004 - Aug. 2004 **JIA CHENG GUO**, Visiting undergraduate student, MNIIMBS, University of Shanghai, China

#### **UIC HONORS COLLEGE STUDENTS**

Aug. 2013 - Present **PHILIP SCHORSCH**, Undergraduate student, UIC, Chicago, IL

Jan. 2013 - Present **ALEXANDER HEINZ**, Undergraduate student, UIC, Chicago, IL

Jul. 2012 - Apr. 2013 **DIANA Y. MEI**, Undergraduate student, UIC, Chicago, IL

Jul. 2012 - Present **ANNIE SITU**, Undergraduate student, UIC, Chicago, IL

Jul. 2011 - Present **MAGELLAN YADAO**, Undergraduate student, UIC, Chicago, IL

Jul. 2011 - Present **JOCELIN GAMEZ**, Undergraduate student, UIC, Chicago, IL

Jul. 2011 – Dec. 2012 **RABIA ALI**, Undergraduate student, UIC, Chicago, IL

Jan. 2010 - Apr. 2011 **MATTHEW L ROKITA**, Undergraduate student, UIC, Chicago, IL (currently a PharmD student at UIC)

Sept. 2009 - Apr. 2011 **VASU PANTEL**, Undergraduate student, UIC, Chicago, IL

Sept. 2009 - Apr. 2012 **ELIAS C. PITTOS**, Undergraduate student, UIC, Chicago, IL

Sept. 2009 - Apr. 2011 **JOHN SHILKA**, Undergraduate student, UIC, Chicago, IL

Sept. 2009 - Apr. 2012 **JELENA SARIC**, Undergraduate student, UIC, Chicago, IL

Sept. 2009 - Apr. 2011 **XING (SHERRY) ZHANG**, Undergraduate student, UIC, Chicago, IL (currently a PhD student at Cornell)

#### **LAB TECHNICIAN**

Jul. 2008 - Aug. 2008 **JENNIFER ZHANG**, Lab technician, UIC, Chicago, IL (currently a resident fellow at Beth Israel Deaconess, Harvard Medical School)

#### **HIGH SCHOOL TEACHER**

Jun. 2013 - Aug. 2013 **FREHIWOT GEBREHIWOT**, Chemistry/Biology teacher at Chicago Academy of Scholastic Achievement (RET trainee), UIC, Chicago, IL

Jun. 2012 - Aug. 2012 **JEROMY BENTLEY**, Chemistry teacher at Naperville Central High School (RET trainee), UIC, Chicago, IL

#### **HIGH SCHOOL STUDENTS**

Jun. 2012 - Present **JEEHO LEE**, Stevenson High School (Lincolnshire IL), UIC, Chicago, IL

Sept. 2011 - Apr. 2012 **TAHIR MOHIDEEN**, Illinois Mathematics and Science Academy (IMSA), UIC, Chicago, IL

Jun. 2011 - Aug. 2011 **JOHN LEE**, Illinois Mathematics and Science Academy (IMSA), UIC, Chicago, IL

Jun. 2011 - Aug. 2011 **MINA HUR**, Neuqua Valley High School, UIC, Chicago, IL (currently at Purdue)

Jun. 2011 - Aug. 2011 **KAYLA LEE**, Neuqua Valley High School, UIC, Chicago, IL

Aug. 2010 - Apr. 2011 **SYDNEY VALERO**, IMSA, UIC, Chicago, IL

Aug. 2009 - Apr. 2010 **DANIEL PAK**, IMSA, UIC, Chicago, IL

Aug. 2009 - Apr. 2010 **TIFFANY SINCLAIR**, IMSA, UIC, Chicago, IL

Oct. 2008 - Apr. 2009 **JASMINE SHAH**, IMSA, UIC, Chicago, IL (currently a PharmD student at UIC)

#### **THESIS COMMITTEE**

Ph.D. Dissertations

**YU ZHANG**, Biopharmaceutical Sciences (PhD), UIC (2014-)

**JASON BUHRMAN**, Biopharmaceutical Sciences (MD/PhD), UIC (2012-)

**SEON KIM**, Bioengineering (PhD), UIC (2013)

**MELANIE KOLLMER**, Biopharmaceutical Sciences, UIC (2012-)

**DEVANG AMIN**, Biomedical Engineering, Northwestern Univ. (2012-)

**FATIMA KHAJA**, Biopharmaceutical Sciences, UIC (2012-)

**AMRITA BANERJEE**, Biopharmaceutical Sciences, UIC (2012)

**RAMANA VISHNUHOTLA**, Bioengineering, UIC (2012)

**NIVRITI GAHLAUT**, Chemistry, UIC (2012)

**MATEUSZ S. WIETecha**, Center for Wound Healing & Tissue Regeneration, UIC (2011)

**CARI LAUNIERE**, Bioengineering, UIC (2012)

**HAO SHEN**, Chemical Engineering, UIC (2013)

**BOOBALAN PACHAIYAPPAN**, Medicinal Chemistry and Pharmacognosy, UIC (2011)

**SOK BEE LIM**, Biopharmaceutical Sciences, UIC (2010)

**KI HWAN NAM**, Bioengineering, UIC (2010)

**MISUK BAE**, Biopharmaceutical Sciences, UIC (2010-)

**SHAWN OPPEGARD**, Bioengineering, UIC (2010)

M.S. Dissertations

**DAVID VAYNSHTEYN**, Biopharmaceutical Sciences, UIC (2012)

**KRISTIN THOMAS**, Biopharmaceutical Sciences, UIC (2010)

**JUNG RARK LEE**, Bioengineering, UIC (2009)

#### **MANUSCRIPT REVIEWS**

- Accounts of Chemical Research
- ACS Nano
- Advanced Materials
- Biomacromolecules
- Biomaterials Science
- Cancer Research
- Chemical Research in Toxicology
- Current Opinion in Solid State & Materials Science
- Journal of the American Chemical Society
- Journal of Biomedical Materials Research
- ACS Applied Materials & Interfaces
- Acta Biomaterialia
- Analyst
- Biomaterials
- Biomedical Materials
- Chemical Communications
- Chemistry – A European Journal
- International Journal of Cancer
- Journal of Applied Polymer Sciences
- Journal of Controlled Release

- Journal of Materials Chemistry
- Journal of Natural Products
- Journal of Pharmacy and Pharmacology
- Journal of Visualized Experiments
- Life Sciences
- Microscopy Research and Technique
- Nanomedicine
- Nanotechnology
- Organic & Biomolecular Chemistry
- Physical Chemistry Chemical Physics
- RSC Advances
- Soft Matter
- Tissue Engineering
- Journal of Nanopharmaceutics and Drug Delivery
- Journal of Nuclear Medicine
- Journal of Physical Chemistry
- Langmuir
- Medicinal Chemistry Communications
- Molecular Pharmaceutics
- Nanoscale
- NanoToday
- Pharmaceutical Research
- Polymer Chemistry
- Small
- Theranostics
- WIREs Nanomedicine & Nanobiotechnology

## COURSES TAUGHT

- **Spring 2014** BPS/BioE 522 Principles in Polymer Science, **University of Illinois College of Pharmacy**
- **Fall 2013** BPS 501 Biopharmaceutical Science I, Course co-organizer, **University of Illinois College of Pharmacy**
- **Spring 2013, 2014** PHAR 322 Drug Delivery System II: Pharmaceutical Dosage Forms and Drug Delivery Systems, Lecturer for Polymer Science and Controlled/Targeted Drug Delivery, **University of Illinois College of Pharmacy**
- **Fall 2011** BPS 594 Industrial Biopharmaceutics, **University of Illinois College of Pharmacy**
- **Spring 2011** BPS/BioE 522 Principles in Polymer Science, **University of Illinois College of Pharmacy**
- **Fall 2010-2013** BPS 501 Biopharmaceutical Science I, Lecturer for Basic Organic Chemistry, Conjugation Chemistry **University of Illinois College of Pharmacy**
- **Fall 2008-2013** BPS 507 Drug Discovery, Lecturer for Controlled and Targeted Drug Delivery, **University of Illinois College of Pharmacy**
- **Fall 2009, 2010** BioE 460 Materials in Bioengineering, Lecturer for Biofunctional Surfaces – Chemistries and Modification Methods, **University of Illinois at Chicago College of Engineering**

## PUBLICATIONS

### BOOK CHAPTERS

1. “Multifunctional Dendritic Nanoparticles as a Nanomedicine Platform”  
R.M. Pearson, J.H. Myung, and S. Hong\* in a book of “*Cancer Therapeutics and Imaging: Molecular and cellular engineering and nanobiomedicine*” edited by K. Rege, *World Scientific Publishing Co., Pte., Ptd.*, SINGAPORE, **2014**, In Press.
2. “Bioinspired Engineering of Multifunctional Devices”  
R.M. Pearson, J.H. Myung, and S. Hong\* in a book of “*Handbook of Biomimetics and Bioinspiration*” edited by E. Jabbari, A. Khademhosseini, L.P. Lee, D. Kim, and A. Ghaemmaghami, *World Scientific Publishing Co., Pte., Ptd.*, SINGAPORE, **2014**, ISBN: 978-981-4354-92-9.
3. “Multifunctional Architectures of Dendritic Nanocarriers and Their Promising Impact on Targeted Drug Delivery”  
R.M. Pearson, J.W. Bae, and S. Hong\* in a book of “*Nanoparticulate Drug Delivery Systems: Promises and Challenges*” edited by Y. Yeo, *John Wiley & Sons, Inc.*, Hoboken, NJ, **2013**, ISBN 978-1-118-14887-7.
4. “Microscale Approaches for Bone Tissue Engineering”  
J.M. Karp, A. Mahdavi, S. Hong, A. Khademhosseini, and R. Langer in a book of “*Micro- and Nanoengineering of the Cell Microenvironment: Technologies and Applications*” co-edited by A. Khademhosseini, J. Borenstein, S. Takayama, M. Toner, *Artech House, Inc.*, Norwood, MA, **2008**, ISBN 978-1-59693-148-0.
5. “Nanoparticle Membrane Interactions: Mechanism form Enhanced Permeability”  
S. Hong, A. Mecke, P. Leroueil, M.M. Banaszak Holl, and B.G. Orr in a book of “*Dendrimer Based Nanomedicine*” co-edited by I.J. Majoros and J.R. Baker, *Pan Stanford Publishing*, Hackensack, NJ, **2008**,



## PEER-REVIEWED ARTICLES

(Total citation: >4,400 times, *h*-index: 19, \*corresponding author, †co-first author, [click here for Google Scholar](#))

1. "Poly(ethylene glycol) Corona Chain Length Controls End-group-dependent Cell Interactions of Dendron Micelles"  
H.-J. Hsu, S. Sen, R.M. Pearson, P. Kral, and S. Hong\*, *Submitted*.
2. "A Biomimetic Tumor Cell Capture Platform based on Multivalent Binding and Cell Rolling: Expansion to multiple antibodies and validation using human blood"  
J.H. Myung, K.A. Gajjar, J. Chen, R.E. Molokie, and S. Hong\*, *Submitted*.
3. "Prolonged Blood Circulation and Enhanced Tumor Accumulation of Folate-targeted Dendrimer-Polymer Hybrid Nanoparticles"  
S. Sunoqrot, J. Bugno, D. Lantvit, J.E. Burdette, and S. Hong\*, *Journal of Controlled Release* **2014**, In Press.
4. "Understanding Nano-bio Interactions to Improve Nanocarriers for Drug Delivery"  
R.M. Pearson, H.-J. Hsu, J. Bugno, and S. Hong\*, *MRS Bulletin* **2014**, 39(3), 227-237.
5. "Dendron-based Micelles for Topical Delivery of Endoxifen: A potential chemo-preventive medicine for breast cancer"  
Y. Yang, R.M. Pearson, O. Lee, R.T. Chatterton, S.A. Khan, and S. Hong\*, *Advanced Functional Materials* **2014**, 24(17), 2441-2449. *Highlighted by the journal as Frontispiece*.
6. "Follicle Stimulating Hormone Peptide-conjugated Dendrimers for Targeted Delivery to Ovarian Cancer Cells"  
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11. "Nanoscale Polymeric Penetration Enhancers in Topical Drug Delivery"  
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14. "Distance-mediated Plasmonic Dimers for Reusable Colorimetric Switches: A measurable peak shift of over 60 nm"  
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4. "Transdermal Delivery of Chemo-Preventive Medicine for Breast Cancer Prevention using Poly(amidoamine) Dendrimers as a Penetration Enhancer"  
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## INVITED TALKS

1. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Departmental Seminar, Bioengineering, National University of Singapore, Singapore, SINGAPORE, 04/15/14
2. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Departmental Seminar, Biomedical Engineering, Nanyang Technological University, Singapore, SINGAPORE, 04/14/14
3. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Keynote Speech, International Conference on Mechanics and Materials Engineering, Xi'an, CHINA, 04/12/14
4. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Departmental Seminar, Chemistry, Shanghai, CHINA, 04/10/14
5. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", IBS Special Seminar, Chemistry, Pohang Institute of Science and Technology (Postech), Pohang, KOREA, 04/07/14
6. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Alchemy Special Seminar, Chemistry, University of Illinois at Chicago, Chicago, IL, 03/18/14
7. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Departmental Seminar, Cancer Center/Department of Biochemistry and Molecular Biology, Loyola University Medical Center, Maywood, IL, 11/05/13
8. "Novel Dendritic Nanocarriers: Dendron micelles and dendrimer-polymer hybrid nanoparticles", Invited Talk, NanoDDS, La Jolla, CA, 10/26/13
9. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Keynote Speech, Annual NanoSymposium, University of Wisconsin-Whitewater, Whitewater, WI, 10/18/13

10. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Keynote Speech, Annual Meeting of Korean Society of Biomaterials, Seoul, KOREA, 09/26/13
11. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Departmental Seminar, Department of BioNanoEngineering, Hanyang University, Ansan, KOREA, 09/23/13
12. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Departmental Seminar, Department of Physical Pharmacy, Yonsei University International Campus, Songdo, KOREA, 09/24/13
13. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Departmental Seminar, Department of Chemical Engineering, Seoul National University, Seoul, KOREA, 09/25/13
14. "Dendritic Nanomaterials for Targeting and Capturing Tumor Cells", Departmental Seminar, Department of Applied Chemistry and Biotechnology, Ajou University, Suwon, KOREA, 09/25/13
15. "Novel Dendritic Nanocarriers: Dendron micelles and dendrimer-polymer hybrid nanoparticles", Invited Oral Presentation, Division of Polymer Chemistry, 246<sup>th</sup> ACS National Meeting, Indianapolis, IN, 09/10/13
16. "Biomimetic Combination of Cell Rolling and Dendrimer-mediated Multivalent Binding for Enhanced Detection of Tumor Cells", Invited Talk, 2013 Gordon Research Conference - Cancer Nanotechnology, West Dover, VT, 07/16/13
17. "Biomimetic Nanotechnology for Enhanced Detection of Tumor Cells", Invited Talk, GSA Symposium 2013, National University of Singapore, SINGAPORE, 07/03/13
18. "Biomimetic Nanotechnology for Enhanced Detection of Tumor Cells", Invited Talk, 7<sup>th</sup> International Conference on Materials for Advanced Technologies (ICMAT), Suntec, SINGAPORE, 07/02/13
19. "The Development of a CTC Detection Device Based on Biomimetic Nanotechnology", Special Seminar, Cancer Center, Asan Medican Center, Seoul, KOREA, 06/28/13
20. "Biomimetic Nanotechnology for Targeted Drug Delivery and Surface Detection of Tumor Cells", Departmental Special Seminar, College of Pharmacy, Korea University, Sejong City, KOREA, 06/27/13
21. "Biomimetic Nanotechnology for Targeted Drug Delivery and Surface Detection of Tumor Cells", Departmental Special Seminar, Department of Biotechnology, Yonsei University, Seoul, KOREA, 06/26/13
22. "Nanoscale Evaluation of Novel Dendritic Nanocarriers for Cancer Targeting", Accelerating Development of Difficult-to-deliver Drugs, 12<sup>th</sup> Annual World Pharma Congress Meeting, Philadelphia, PA 06/05/13
23. "Development of Nanotechnology Application into Innovative Therapies", Short Courses, 12<sup>th</sup> Annual World Pharma Congress Meeting, Philadelphia, PA 06/03/13
24. "Nanotechnology for Targeting and Capturing Tumor Cells" Seminar Series in Advances in Biotechnology, Department of Chemical and Biological Engineering, Northwestern University, Evanston, IL, 05/15/2013
25. "Dendron-based Micelles: A potential nanocarrier platform", Invited Talk, 3<sup>rd</sup> International Conference and Exhibition on Pharmaceutics & Novel Drug Delivery Systems, Northbrook, IL, 04/08/13
26. "Biomimetic Nanotechnology for Targeted drug delivery and Tumor cell isolation", Departmental Seminar, Department of Chemical Engineering, Oklahoma State University, Stillwater, OK, 04/02/13
27. "Biomimetic Nanotechnology for Targeted drug delivery and Tumor cell isolation", Departmental Seminar, Department of Pharmacology, University of Illinois College of Medicine, Chicago, IL, 02/18/13
28. "Biomimetic Nanotechnology to Tackle Cancer: Targeted drug delivery and tumor cell isolation", Departmental Seminar, Department of Pharmaceutical Sciences, University of Kentucky, Lexington, KY, 01/11/13
29. "Biomimetic Nanotechnology to Tackle Cancer: Targeted drug delivery and tumor cell isolation", Departmental Seminar, Department of Nanoengineering, University of California-San Diego, La Jolla, CA, 12/12/12
30. "Biomimetic Nanotechnology to Tackle Cancer: Targeted drug delivery and tumor cell isolation", Special Seminar, University of Illinois College of Pharmacy at Rockford, Rockford, IL, 11/29/12
31. "Biomimetic Nanotechnology to Tackle Cancer", Medical Scientist Training Program Lunch Semiar, University of Illinois College of Medicine, Chicago, IL, 11/6/12
32. "Biomimetic Nanotechnology to Tackle Cancer: Targeted drug delivery and tumor cell isolation", Drug Delivery for Cancer using Smart Technology, 16<sup>th</sup> International Pharmaceutical Technology Symposium (IPTs), Antalya, TURKEY, 09/11/12
33. "Biomimetic Nanotechnology to Tackle Cancer: Targeted drug delivery and tumor cell isolation", Department

of Physical Pharmacy, Purdue University, West Lafayette, IN, 09/06/12

34. "Dendrimer-mediated Multivalent Binding Enhances the Specificity and Sensitivity of Tumor Cell Detection.", Invited Lecture Series on Biomaterials for Sensing and Actuation, IEEE Engineering in Medicine and Biology Society (EMBC '12), San Diego, CA, 09/01/12
35. "Dendron-based Micelles: A potential nanocarrier platform", Invited Lecture Series on Gene and Drug Delivery, IEEE Engineering in Medicine and Biology Society (EMBC '12), San Diego, CA, 08/30/12
36. "Biomimetic Nanotechnology to Tackle Cancer: The future of pharmaceuticals?", 1<sup>st</sup> IPSF African Pharmaceutical Symposium, Algiers, ALGERIA, 07/17/12
37. "Biomimetic Nanotechnology to Tackle Cancer: Targeted drug delivery and tumor cell capturing", MiniSymposium on Drug Delivery and Nanomaterials, Northwestern University, Chicago, IL, 01/30/12
38. "Biomimetic Nanotechnology to Tackle Cancer: Targeted drug delivery and tumor cell capturing", Center Seminar Series, Center of Nanophase Materials Science, Oak Ridge National Laboratory, Oak Ridge, TN, 01/24/12
39. "Biomimetic Nanotechnology to Tackle Cancer: Targeted drug delivery and tumor cell capturing", Cancer Center, University of Chicago, Chicago, IL, 11/08/11
40. "Facilitated Self-Assembly of Novel Dendron-Based Copolymers", Invited Lecture Series on Gene and Drug Delivery, IEEE Engineering in Medicine and Biology Society (EMBC '11), Boston, MA, 09/01/11
41. "Biomimetic Nanotechnology to Tackle Cancer: Targeted Drug Delivery and Tumor Cell Isolation", Invited Talk, The 3<sup>rd</sup> Annual Symposium of Controlled Release Society (CRS) Illinois Student Chapter, Chicago, IL, 08/12/11
42. "Polymeric Nanodevices for Targeted Drug Delivery and Tumor Cell Isolation", Department Workshop Series, Department of Ophthalmology and Visual Sciences, University of Illinois Eye and Ear Infirmary, Chicago, IL, 06/17/11
43. "Bio-inspired Drug Delivery Systems Based on Dendrons", Vahlteich Awards Research Talk, University of Illinois College of Pharmacy Faculty Retreat, Fontana, WI, 05/12/11
44. "Polymeric Nanodevices for Targeted Drug Delivery and Tumor Cell Isolation", Departmental Seminar, Department of Bioengineering, University of Illinois, Urbana, IL, 03/31/11
45. "Novel Nanocarriers for Targeting and Capturing Tumor Cells" Center Seminar Series, Center for Pharmaceutical Biotechnology, University of Illinois, Chicago, IL, 03/03/11
46. "Polymeric Nanodevices for Targeted Drug Delivery and Tumor Cell Isolation" Special Seminar, College of Pharmacy, Chungnam National University, Daejeon, KOREA, 12/06/10
47. "Polymeric Nanodevices to Tackle Cancer: From Prevention to Treatments" Invited Session on Pharmaceuticals and Formulations, The International Conference of the Korean Society of Pharmaceutical Sciences and Technology, Jeju Island, KOREA, 12/03/10
48. "Polymeric Nanodevices for Targeted Drug Delivery and Tumor Cell Isolation" Special Seminar, College of Pharmacy, Seoul National University, Seoul, KOREA, 11/30/10
49. "Polymeric Nanodevices for Targeted Drug Delivery and Tumor Cell Isolation" Department of Chemistry, University of Illinois, Chicago, IL, 10/05/10
50. "Polymeric Nanodevices to Tackle Cancers: From Prevention to Treatments" Department Seminar, The Department of Physiology and Biophysics, University of Illinois Medical Center, Chicago, IL, 09/10/10
51. "Polymeric Nanodevices to Tackle Cancers: From Prevention to Treatments" The 2<sup>nd</sup> KSEA Midwest Regional Conference, Iowa City, IA, 03/21/10
52. "Enhanced Tumor Cell Separation by Surfaces Functionalized with Combinations of Bioadhesive Proteins" Proceeding of ASME 2010 First Global Congress on NanoEngineering for Medicine and Biology (NEMB 2010), Houston, TX, 02/08/10
53. "Dendrimer-based Targeted Drug Delivery and Biomimetic Cell-specific Separation Device" Special Seminar, Central R&D Center, Amore-Pacific Co., Ltd., Yong-in, KOREA, 10/14/2009
54. "Dendrimer-based Targeted Drug Delivery and Biomimetic Cell-specific Separation Device" Departmental Seminar, Department of Molecular Systems, Hanyang University, Seoul, KOREA, 10/13/2009
55. "Dendrimer-based Targeted Drug Delivery and Biomimetic Cell-specific Separation Device" Special Seminar, Polymer Hybrids Research Division, Korea Institute of Science and Technology (KIST), Seoul, KOREA,

10/8/2009

56. "Polymeric Nanocarriers for Targeted Drug Delivery" Invited session on Drug delivery, Fall National Meeting of Polymer Society of Korea, Gwangju, KOREA, 10/7/2009
57. "Dendrimer-based Targeted Drug Delivery and Biomimetic Cell-specific Separation Device" College of Pharmacy Seminar Series, College of Pharmacy, Sookmyung Women's University, Seoul, KOREA, 10/5/2009
58. "Bio-device for Capturing Circulating Tumor Cells" Seminar Series in Advances in Biotechnology, Department of Chemical and Biological Engineering, Northwestern University, Evanston, IL, 05/26/2009
59. "Multivalent Targeting using Dendrimer-Based Nanomedicine" University of Illinois Cancer Center Seminar Series, Chicago, IL, 05/12/2009
60. "Polymer-based Nanomedicine: Multivalent Targeting and Rolling-based Cell Capturing" Special Seminar, Center for Nanoscale Materials Seminar, Argonne National Laboratory, Argonne, IL, 03/27/2009
61. "Biomimetic Device for Separation of Circulating Tumor Cells" Korean Scientists and Engineers in America (KSEA) Midwest Regional Meeting, Oakbrook Terrace, IL, 02/28/2009
62. "Polymer-based Nanomedicine for Anti-cancer Treatment: Multivalent targeting and rolling-based cell capturing" Department Seminar, Bioengineering, University of Illinois, Chicago, IL, 01/30/2009
63. "Polymer-based Nanomedicine: Multivalent Targeting and Cell Rolling-based Capturing of Cancer Cells" 2<sup>nd</sup> COE-COM Research Seminar, University of Illinois, Chicago, IL, 10/03/2008
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